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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,701	01/12/2004	Shunpei Yamazaki	07977-276002 / US4942D1	9100

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EXAMINER	
NGUYEN, DAO H	

ART UNIT	PAPER NUMBER
2818	

NOTIFICATION DATE	DELIVERY MODE
12/12/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/754,701	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	DAO H. NGUYEN	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *40-109* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-109* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/09/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the communications dated 02/01/2008.

Claims 40-109 are active in this application.

Claim(s) 1-39 have been cancelled.

Remarks

2. Applicants' argument, filed 08/07/2008, have been fully considered, but is not persuasive.

With respect to claims 47-62, 64, and 65, Applicants argue that the material discussed at col. 8, lines 15-44 of Tang is a part of a hole injection layer and NOT a luminescent layer as recited in claim 47; that is, Tang's hole injection layer does not emit light and cannot qualify as a luminescent material as recited in claim 47. This is not agreed.

Tang's Fig. 3, for example, shows an electroluminescent element comprising anode 72, electroluminescent thin film 82, and cathode 84. The electroluminescent thin film 82 includes a hole injecting and transporting zone and an electron injecting and transporting zone (col. 7, line 56 - col. 8, line 4). Luminescence occurs when holes from the hole injecting layer and electrons from the electron injecting layer are recombined (col. 8, lines 4-9). That is, without holes form the hole injecting layer, luminescence could not happen. Clearly, the material of the hole injecting layer is a material for

luminescence. Such material is described at col. 8, lines 15-44 of Tang. In the other words, Tang does disclose the thin film including the luminescent material as claimed.

Besides, the material described at col. 8, lines 15-44 of Tang and the claimed material are having the same material formula; hence, Tang's material is inherently having the same properties as that of the claimed material, that is, Tang's material is inherently a luminescent material.

With respect to claims 40-46, 55, 63 and 66-109, Applicants argue that the electroluminescent element of Tang in view of Kimura is not configured to obtain a luminous efficiency of 9%. This is not agreed.

Tang in view of Kimura does disclose device(s) comprising all features as that of the claimed device (see the Office Action of 04/10/2008). Though Tang in view of Kimura does not specifically and explicitly describe an electroluminescent element configured to obtain a luminous efficiency of 9%, as asserted by Applicants (Applicants' Remarks, page 14 of 15, paper of 08/07/2008), Tang does mention that luminous efficiency is a desirable property of an organic EL material. Therefore, one of ordinary skills in the art would be able to obtain an electroluminescent element at a desired luminescent efficiency, including an efficiency of 9%, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Furthermore, because the device of Tang in view of Kimura is structurally identical to the claimed device, one of ordinary skill(s) in the art would have expected that the device of Tang in view of Kimura would have performed the same function(s) as that of the claimed device, or that the device of Tang in view of Kimura would have been capable of having an efficiency as that of the claimed device.

According to MPEP §2112.01, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. That is, in order to patentably distinguish the claimed invention from the prior art, the claimed invention must show a structural difference between the claimed invention and the prior art. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Claims were directed to a titanium alloy containing 0.2-0.4% Mo and 0.6-0.9% Ni having corrosion resistance. A Russian article disclosed a titanium alloy containing 0.25% Mo and 0.75% Ni but was silent as to corrosion resistance. The Federal Circuit held that the claim was anticipated because the percentages of Mo and Ni were

squarely within the claimed ranges. The court went on to say that it was immaterial what properties the alloys had or who discovered the properties because the composition is the same and thus must necessarily exhibit the properties.). See also In re Ludtke, 441 F.2d 660, 169 USPQ 563 (CCPA 1971) (Claim 1 was directed to a parachute canopy having concentric circumferential panels radially separated from each other by radially extending tie lines. The panels were separated "such that the critical velocity of each successively larger panel will be less than the critical velocity of the previous panel, whereby said parachute will sequentially open and thus gradually decelerate." The court found that the claim was anticipated by Menget. Menget taught a parachute having three circumferential panels separated by tie lines. The court upheld the rejection finding that applicant had failed to show that Menget did not possess the functional characteristics of the claims.); Northam Warren Corp. v. D. F. Newfield Co., 7 F. Supp. 773, 22 USPQ 313 (E.D.N.Y. 1934) (A patent to a pencil for cleaning fingernails was held invalid because a pencil of the same structure for writing was found in the prior art.). See further MPEP § 2114.

With respect to claim 73, Applicants' argument is not agreed.

Regardless of whether or not Tang specifically and explicitly discloses a p-channel transistor, it would have been obvious to one having ordinary skill in the art at the time the invention was made that whether a p-channel transistor or an n-channel transistor is selected to use in a semiconductor device, it depends on the desired application of the device, and it would involve only routine skills in the art. Changing a

p-channel transistor by an n-channel transistor, or vice versa, would not make any change in the spirit and/or scope of an invention. There would be no patentable weight by claiming a transistor a p-channel transistor or an n-channel transistor. Therefore, Tang does disclose the claimed transistor, either inherently or obviously.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim(s) 47-62, 64, and 65 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Tang et al. (US 5,684,365), in view of Kimura (US 6,518,941).

Regarding claim 47, Tang discloses a light emitting device, shown in figs. 1-8, comprising:

a transistor (fig. 8);

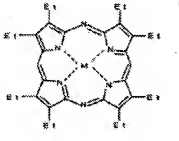
an electroluminescent element EL electrically connected to the transistor;

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent

element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element EL includes a thin film 82 (fig. 8) including a luminescent material expressed by a following formula:



wherein Et represents etyl group; and M represents an element belonging to group 8 to 10 of a periodic table (col. 8, lines 15-44); see further the above remarks.

Tang fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding claim 48, Tang/Kimura disclose the device wherein M is an element selected from the group consisting of nickel, cobalt and palladium. See col. 8, lines 15-44 of Tang.

Regarding claims 49-54, Tang/Kimura disclose the device comprising all claimed limitations. See col. 1, line 21- col. 2, line 37 and figs. 1-8 of Tang.

Regarding claim 55, Tang discloses a light emitting device, shown in figs. 1-8, comprising:

a transistor (fig. 8);

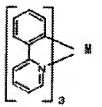
an electroluminescent element EL electrically connected to the transistor;

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element is configured to obtain a luminous efficiency of 9% (see the above remarks),

wherein the electroluminescent element EL includes a thin film 82 (fig. 8) including a luminescent material expressed by a following formula:



wherein Et represents etyl group; and M represents an element belonging to group 8 to 10 of a periodic table (col. 8, line 64 – col. 9, line 51).

Tang fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding claim 56, Tang/Kimura disclose the device wherein M is an element selected from the group consisting of nickel, cobalt and palladium. See col. 8, lines 15-44 of Tang.

Regarding claims 57-62, Tang/Kimura disclose the device comprising all claimed limitations. See col. 1, line 21- col. 2, line 37, and figs. 1-8 of Tang.

Regarding claims 64-65, Tang/Kimura discloses the light emitting device comprising all claimed limitations. See col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61 of Kimura. Nevertheless, it is noted that since this invention is about a device itself, not about method(s) for operating a device, therefore, "method of operating a device" limitation(s) would not have patentable weight on device claim(s).

5. Claim(s) 40-46, 63, and 66-109 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Tang et al. (US 5,684,365), in view of Forrest et al. (US 6,310,360), and further in view of Kimura (US 6,518,941).

Regarding claim 40, Tang discloses a light emitting device, shown in figs. 1-8, comprising:

an electroluminescent element using a luminescent material (col. 6, line 9 – col. 8, line 44) ;

a transistor electrically connected to the electroluminescence element (fig. 8);

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element is configured to obtain a luminous efficiency of 9% (see the above remarks).

Tang is silent on the electroluminescent element in which electroluminescence is obtained by triplet excitation.

Forrest discloses a light emitting device comprising an electroluminescent element using a luminescent material (fluorescent emitter, sensitizer molecular or ISC Agent, phosphorescent emitter; col. 9, line 18 to col. 11, line 18) in which electroluminescence is obtained by triplet excitation (col. 2, line 58 to col. 3, line 53; col. 5, lines 9-27: the ISC Agents convert all of the excitations/excitons into their triplet excitations/excitons, which do emit; see also col. 15, lines 21-50; col. 16, lines 31-35).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the invention of Tang to use a luminescent material in which electroluminescence is obtained by triplet excitation, as that taught by Forrest, in order to enhance optical purity and increase efficiency of the emission (see col. 3, lines 45-54, and col. 12, lines 17-24 of Forrest).

Tang/Forrest fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang/Forrest to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding to claim 41, Tang/Forrest/Kimura discloses the device whrein the transistor is a thin film transistor. See figs. 1-8 of Tang.

Regarding claims 42-46, Tang/Forrest/Kimura discloses the device comprising all claimed limitations. See col. 1, line 21- col. 2, line 37 and figs. 1-8 of Tang.

Regarding claim 63, Tang/Forrest/Kimura discloses the light emitting device comprising all claimed limitations. See col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61 of Kimura. Nevertheless, it is noted that since this invention is about a device itself, not about method(s) for operating a device, therefore, "method of operating a device" limitation(s) would not have patentable weight on device claim(s).

Regarding claim 66, Tang discloses a light emitting device comprising:

an electroluminescent element EL comprising a first electrode (Anode Electrode), a second electrode (Top electrode), and a luminescent material 82 interposed between the first and the second electrodes (fig. 8);

a transistor having a source region, a drain region and a gate electrode (Poly-Si Gate, fig. 8);

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element is configured to obtain a luminous efficiency of 9% (see the above remarks),

wherein any one of the source and drain region is electrically connected to the first electrode (Anode Electrode).

Tang is silent on the electroluminescent element in which electroluminescence is obtained by triplet excitation.

Forrest discloses a light emitting device comprising an electroluminescent element using a luminescent material (fluorescent emitter, sensitizer molecular or ISC Agent, phosphorescent emitter; col. 9, line 18 to col. 11, line 18) in which electroluminescence is obtained by triplet excitation (col. 2, line 58 to col. 3, line 53; col. 5, lines 9-27: the ISC Agents convert all of the excitations/excitons into their triplet excitations/excitons, which do emit; see also col. 15, lines 21-50; col. 16, lines 31-35).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the invention of Tang to use a luminescent material in which electroluminescence is obtained by triplet excitation, as that taught by Forrest, in order to enhance optical purity and increase efficiency of the emission (see col. 3, lines 45-54, and col. 12, lines 17-24 of Forrest).

Tang/Forrest fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that

is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang/Forrest to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding to claim 67, Tang/Forrest/Kimura discloses the device wherein the transistor is a thin film transistor. See figs. 1-8 of Tang.

Regarding claims 68-72, Tang/Forrest/Kimura discloses the device comprising all claimed limitations. See col. 1, line 21- col. 2, line 37, and figs. 1-8 of Tang.

Regarding claim 73, Tang discloses a light emitting device comprising:

an electroluminescent element comprising:

a first electrode (Anode Electrode), a second electrode (Top electrode), and a luminescent material 82 interposed between the first and the second electrodes (fig. 8);

a transistor having a source region, a drain region and a gate electrode (Poly-Si Gate, fig. 8),

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the transistor is a p-channel transistor (figs. 1-8; see also the above remarks),

wherein any one of the source and drain region is electrically connected to the first electrode (Anode Electrode).

Tang is silent on the electroluminescent element in which electroluminescence is obtained by triplet excitation.

Forrest discloses a light emitting device comprising an electroluminescent element using a luminescent material (fluorescent emitter, sensitizer molecular or ISC Agent, phosphorescent emitter; col. 9, line 18 to col. 11, line 18) in which

electroluminescence is obtained by triplet excitation (col. 2, line 58 to col. 3, line 53; col. 5, lines 9-27: the ISC Agents convert all of the excitations/excitons into their triplet excitations/excitons, which do emit; see also col. 15, lines 21-50; col. 16, lines 31-35).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the invention of Tang to use a luminescent material in which electroluminescence is obtained by triplet excitation, as that taught by Forrest, in order to enhance optical purity and increase efficiency of the emission (see col. 3, lines 45-54, and col. 12, lines 17-24 of Forrest).

Tang/Forrest fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang/Forrest to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that

taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding claims 74-80, Tang/Forrest/Kimura discloses the device comprising all claimed limitations. See col. 1, line 21- col. 2, line 37, and figs. 1-8 of Tang.

Regarding claim 81, Tang discloses a light emitting device comprising:

an electroluminescence element comprising:

an anode electrode, a cathod (Top electrode), and a luminescent material 82 interposed between the anode and the cathode (fig. 8);

a transistor having a source region, a drain region and a gate electrode (Poly-Si Gate, fig. 8),

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element is configured to obtain a luminous efficiency of 9% (see the above remarks),

wherein any one of the source and drain region is electrically connected to the anode.

Tang is silent on the electroluminescent element in which electroluminescence is obtained by triplet excitation.

Forrest discloses a light emitting device comprising an electroluminescent element using a luminescent material (fluorescent emitter, sensitizer molecular or ISC Agent, phosphorescent emitter; col. 9, line 18 to col. 11, line 18) in which electroluminescence is obtained by triplet excitation (col. 2, line 58 to col. 3, line 53; col. 5, lines 9-27: the ISC Agents convert all of the excitations/excitons into their triplet excitations/excitons, which do emit; see also col. 15, lines 21-50; col. 16, lines 31-35).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the invention of Tang to use a luminescent material in which electroluminescence is obtained by triplet excitation, as that taught by Forrest, in order to enhance optical purity and increase efficiency of the emission (see col. 3, lines 45-54, and col. 12, lines 17-24 of Forrest).

Tang/Forrest fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang/Forrest to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding claim 82, Tang/Forrest/Kimura discloses the device wherein the transistor is a p-channel transistor. See figs. 1-8 of Tang.

Regarding claim 83-88, Tang/Kimura discloses the device comprising all claimed limitations. See figs. 1-8 of Tang.

Regarding claim 89, Tang discloses a light emitting device comprising:

an electroluminescent element comprising:

a first electrode (Anode Electrode), a second electrode (Top electrode), and a luminescent material 82 interposed between the first and the second electrodes (fig. 8);

a transistor having a source region, a drain region and a gate electrode (Poly-Si Gate, fig. 8),

a driver circuit configured to apply signals to a gate electrode of the transistor (col. 2, line 48); and

a power source electrically connected to the electroluminescent element EL via the transistor, configured to apply an operation voltage of the electroluminescent element which is 10 v or less (col. 2, lines 38-47; col. 5, lines 35-37; col. 9, line 60-col. 10, line 14),

wherein the electroluminescent element is configured to obtain a luminous efficiency of 9% (see the above remarks),

wherein an LDD region is not particularly provided between the source region and the drain region,

wherein any one of the source and drain region is electrically connected to the first electrode (Anode Electrode).

Tang is silent on the electroluminescent element in which electroluminescence is obtained by triplet excitation.

Forrest discloses a light emitting device comprising an electroluminescent element using a luminescent material (fluorescent emitter, sensitizer molecular or ISC Agent, phosphorescent emitter; col. 9, line 18 to col. 11, line 18) in which electroluminescence is obtained by triplet excitation (col. 2, line 58 to col. 3, line 53; col. 5, lines 9-27: the ISC Agents convert all of the excitations/excitons into their triplet excitations/excitons, which do emit; see also col. 15, lines 21-50; col. 16, lines 31-35).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the invention of Tang to use a luminescent material in which electroluminescence is obtained by triplet excitation, as that taught by Forrest, in order to enhance optical purity and increase efficiency of the emission (see col. 3, lines 45-54, and col. 12, lines 17-24 of Forrest).

Tang/Forrest fails to disclose the driver circuit configured to apply digital signals to the gate electrode of the transistor.

Kimura discloses a light emitting device comprising an electroluminescent element 10810 (figs. 1, 2) using a luminescent material and a thin film transistor 10710 electrically connected to the electroluminescent element 10810, and a driver circuit that is configured to apply digital signals to the gate electrode of the transistor 10710 to switch the transistor on/off. See further col. 2, lines 19-49; col. 3, line 47 to col. 4, line 61.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tang/Forrest to include a driver circuit that is configured to apply digital signals to the gate electrode of the transistor, as that taught by Kimura, in order to reduce the nonuniformity in the luminous intensity of the luminescent element, caused by the nonuniformity in the conductance of the transistor, thereby improving the image quality of the device (col. 2, lines 1-10, and lines 19-49 of Kimura.) Furthermore, such modification would greatly improve the performance of the device of Tang due to an ease in controlling the device.

Regarding claims 90-95, Tang/Forrest/Kimura discloses the device comprising all claimed limitations. See figs. 1-8 of Tang.

Regarding claims 96-109, Tang/Forrest/Kimura discloses the device comprising all claimed limitations. See col. 1, line 21-col. 3, line 5 of Tang.

Conclusion

6. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (571)272-

1791. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke, can be reached on (571)272-1657. The fax numbers for all communication(s) is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1633.

/DAO H NGUYEN/
Primary Examiner, Art Unit 2818
December 4, 2008